Inside Wallops

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Goddard Space Flight Center
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NASA Tests Future Flight Vehicle Concepts

A hybrid rocket carrying futuristic space vehicle concepts completed its first flight on December 18. Launched at 6:15 a.m. EST from Wallops Island, the rocket's bright plume was seen more than 200 miles away in New Jersey and Pennsylvania.

The rocket, built by Lockheed Martin Space Systems, New Orleans, was used to launch a NASA designed payload containing three test articles.

The purpose of the Suborbital Aerodynamic Reentry Experiments (SOREX-2) payload was to develop new high-speed flight test and control methods. These techniques may be applied to novel designs for high-speed flight and next generation planetary entry technology.

"This suborbital rocket flight was intended to test these concepts at more than mach five or five times the speed of sound during reentry," according to Marc Murbach, a research engineer from NASA Ames Research Center. "We are trying to develop a wind tunnel in the sky. This capability may herald new techniques for the rapid development of innovative hypersonic flight concepts". The SOREX-2 project team is currently analyzing data on the payload's performance.

The payload, a joint project between Ames and Wallops, included a 'wave rider' flying wedge, a linear aerobrake (or hypersonic parachute), and a Slotted Compression Ramp Probe (SCRAMP), a super stable planetary reentry probe. The wedge is about 50 inches long and was to free-fly after deployment.

The launch is the first test flight of a large hybrid propulsion system. Lockheed Martin's Michoud Operations designed and built the 60-foot long rocket to demonstrate that hybrid propulsion technology offers a low cost solution for delivering payloads. The two-foot diameter rocket used liquid oxygen and solid fuel to provide a thrust of 60,000 pounds and achieved an altitude of approximately 43.5 miles.

"Hybrid propulsion offers significant advantages over solid fuel propellants in that hybrids are non-explosive, able to be throttled, low cost and environmentally benign," said Randy Tassin, vice president, Program Management & Technical Operations for Lockheed Martin Space Systems, Michoud Operations, La.

Lockheed Martin signed a Space Act Agreement with NASA Marshall Space Flight Center in 1999 to develop, test and launch the hybrid sounding rocket. The program goal is to develop a single-stage hybrid propulsion system capable of replacing existing two- and three-stage sounding rockets.

Photo by James Mason-Foley

The hybrid rocket prior to launch.

Wallops Annual Awards Ceremony

The following NASA personnel were recognized for their years of service during the Annual Awards Ceremony held December 13.

25 Years

Linda Layton	Bob Herrick
Bernie Pagliaro	Bob Reynolds
John Brinton	George Postell
Claudia Underwood	Steve Long
Wayne Brittingham	Preston Davis, Jr.
Herb Morgan	Drew Green
Lester Crockett (deceased)	

30 Years

Timmy Abbott	Don Langley
Chico Ayers	Rob Beyma
Dollie Harrison	

35 Years

Lucille Fox	Frank Lau
Mike Roberts	Doug Young
Bill Krabill	Ed Walsh

40 Years

Terry Spurley	Pat Bradley
Bobby Wessells	

50 Years

Frank Schmidlin

Wallops Shorts……..

Launches

A NASA Black Brant X sounding rocket was successfully launched on December 14 from Svalbard, Norway. The payload was a geospace science experiment. Dr. Rob Pfaff, NASA Goddard Space Flight Center was the principal investigator.

A Lockheed Martin hybrid rocket was launched from Wallops Island, Va., on December 18. The payload consisted of three test articles to develop new, high-speed flight test and control methods. The project team is analyzing data on the performance of the payload.

A NASA scientific balloon was successfully launched from McMurdo Station, Antarctica, on December 29. The 29.47 million cubic foot balloon carried a cosmic ray astrophysics payload (ATIC). Dr. John P. Wefel, Louisiana State University, is the principal investigator. As of January 6, the payload is still at float.

A second NASA scientific balloon was launched from McMurdo Station on January 6. The 29.47 million cubic foot balloon carried a cosmic microwave background payload (Boomerang). Dr. John Ruhl, Case Western Reserve University, is the principal investigator. The payload is still at float.

In the news

The New York Times
"Flurry of Satellites to Monitor Earth and Examine Galaxy"

Orlando Sentinel
"NASA Set to Probe Wind, Sea, Ice, Space"

Newsday
"Global and Galactic Probes/New Satellites will Peer at Ocean Winds, Polar Ice and Space Gas"

Washington Post
"NASA Satellites' Missions to Run Hot and Cold"

Space.com
"CHIPS Observatory Will FTP Files in from Space"

Space.com
"Here's Looking at Nothing: New Probe to Examine Supposed Empty Space"

CNN.com
"Futuristic Rocket Soars in Test Flight"

(Continued on the back)

Wallops in the News

(Continued from the front)

Space.com
"NASA Successfully Launches Hybrid Rocket System"

SpaceFlight Now
"NASA Tests Future Flight Vehicle Concepts"

Eastern Shore News
"Wallops' Campbell Charmed by Shore"

Daily Times
"Shore Amazes Wallops Manager"

Eastern Shore News
"NASA Visitor Center Events"

AP Story
"NASA Launching Satellite to Study Ice"

The Daily Times
"View Rocket Flights Online"

Costra Costa Times
"Tiny UC Orbiter Gets Big Break"

Dart League Winners Announced

The winners of the Fall 2002 dart league are:

First Place – Team #4
Alex Coleman, Lee Harrison, Judy Killmon and Norm Reasonover

Second Place – Team #5
Rick Raymond, Tom Weller, Eddie Thornton and Darleen Riley

Third Place – Team #2
Alex Lawson, Karyn Cian, Bill Landon and Chip Blackwell

The High Ton Award winners are Alex Rivera and Ken Hardison-Snell

Perfect Cricket honors go to Lee Harrison.

Photo by James Mason-Foley

Claudia Underwood, (above), is the Wallops Exchange and Morale Association Employee of the Year

Congratulations to

Bill Beishline, who received the Wallops Exchange and Morale Association's first Lifetime Achievement Award.

American Red Cross Blood Drive

January 15
9 a.m. to 1 p.m.
Building F-3

To schedule an appointment, call the Health Unit on x1766.

Keith Koehler and Betty Flowers, Public Affairs Office, will be in Vandenberg, Calif., January 7 to January 13, providing media and guest ops support for the launch of the CHIPS satellite currently scheduled for no earlier than January 10. With the Martin Luther King, Jr. Holiday on January 20, the next Inside Wallops will be January 21.

Photo courtesy of Sandra Kleckner

Charlottee Teter, (pictured), Computer Sciences Corporation, had an outstanding holiday display in her office on the second floor of Building N-161. She brought in only a small portion of her collection of close to 20,000 frog items.

Cool and Wet December

by Bob Steiner, Meteorologist

The increased precipitation events of late fall continued into December 2002. Temperatures also remained slightly below the norm for this time of year.

Measurable rain fell on 10 days for a total of 3.25 inches, compared to the average of nine days with 3.14 inches of rainfall. We also awoke to two inches of snow covering the ground on December 5.

The average temperature for December of 38.9 degrees was 1.9 degrees below normal.

The warmest day of the month was December 31 when the temperature reached 60 degrees.

The coldest morning was on December 7 when the mercury fell to 18 degrees. This set a new daily record low for the date. No record high temperatures were tied or set.

Historically, in February the average temperature is 37.2 degrees. Daily highs begin the month in the mid 40s moving close to 50 degrees by the end of the month.

The warmest temperature recorded for February is 79 degrees recorded on February 1, 1971, and February 27, 1963.

Overnight lows at the beginning of the month are around 30 degrees and fall into the mid to upper 20s for the first third of February before climbing back into the low 30s by the end of the month.

The coldest temperature recorded in February is the –4 degrees recorded on February 2, 1971.

Look for measurable precipitation on nine days depositing on average 3.34 inches of precipitation. We also can expect snow to fall on two days with a total reaching just over three inches.

February is normally the nastiest weather month with snow and ice causing roadways to be slick and visibility greatly reduced.

Extra care should be taken during these weather events. Give yourself that extra 15 to 30 minutes to reach your destination.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found on the NASA Wallops Flight Facility homepage: www.wff.nasa.gov

Editor Betty Flowers